Proceeding Paper

Quality of Life and Psychosocial Impact of the Lockdown Due to the COVID-19 Pandemic on Patients with Cancer: Results of a Preliminary Analysis †

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Abstract: The aim of this study was to assess the quality of life and the psychosocial impact of the lockdown due to the COVID-19 pandemic on cancer patients in Italy using a questionnaire aiming to detect the psychosocial impact of the lockdown. Among their basic needs, psychological and medical support appeared to be prevalent followed by the need for safe transportation to reach the treatment facilities. Internet was their main source of information on the coronavirus. Although 72.7% of patients did not give up hospital therapies, 32.6% complained of variations in the continuity of the treatments. The majority of the sample (73.8%) was scared to be infected but 21.9% did not share their anxieties and worries with others. The multivariate regression analysis showed that a pessimistic perception of their quality of life was influenced by living in extra-urban areas and alone (OR 1.51), while the perception of reduced physical function resulted in a state of anxiety and stress (OR = 1.8) and difficulties in the continuity of medical assistance (OR = 1.3).

Keywords: quality of life; COVID-19; pandemic; lockdown; cancer; mental health

1. Introduction
Cancer is the second leading cause of death globally and according to the Italian National Institute of Statistics (ISTAT), it was responsible for an estimated 180,000 deaths among the approximately 600,000 deaths that occurred in 2016 in Italy [1,2].

In 2019, there were approximately 1000 new cases of cancer per day in Italy with a prediction for the year 2020 of approximately 371,000 new cases of malignant tumour. The most common causes of cancer death in 2019 were cancers of the breast (53,500 new cases), colorectal (49,000), lung (42,500), prostate (37,000) and bladder (29,700) [2].

In recent years, however, mortality from cancer has been decreasing in both sexes and overall recovery rates have improved, especially thanks to the greater adherence to screening programs which allow for the early detection of the neoplasm and a greater effectiveness of therapies.

As for other chronic degenerative diseases, the onset, course and outcomes of cancer are associated with social factors, lifestyles but also psychological factors.

Following the COVID-19 outbreak, in February–March 2020, the Italian Government adopted a progressive implementation of the measures and limitations until a complete lockdown was reached, initially imposed in the northern Italian regions, and then extended, after few weeks, to the entire country. Given the high level of contagiousness, almost every country has adopted restrictive measures of social distancing and home isolation [3].

The interventions and restrictions to control and prevent the spread of the disease in Italy included the obligation for everyone to stay at home and work from home, the closure...
of schools, universities, stores, bars and restaurants, the limitation of free movement of people, including sport-related activities, walking and running outdoors.

There is no doubt that COVID-19 and restrictive government measures harm the mental health of the general population around the world, bringing fear, frustration, anger and a whole series of complex negative emotions [4,5].

The pandemic represents a traumatic event with effects at both the individual and population levels. At the individual level, high rates of depression, anxiety, fear, panic, anger and insomnia have been documented in short-term studies primarily conducted in China [6]. At the population level, the pandemic is associated with a number of psychosocial adversities, including economic difficulties and financial loss (due to unemployment and reduced income), school closures, inadequate resources for medical assistance, domestic violence and poor distribution of basic necessities [7]. The fear of contracting the disease and dying, losing their livelihoods and their loved ones, uncertainty and concerns over the future, social discrimination and separation from families and caregivers are some of the reason why the pandemic represents a complex and multifaceted source of psychosocial stress [8,9].

The decrees, regulations and protocols that were issued during the pandemic period mostly aimed to protect the part of the population considered most vulnerable, especially from the point of view of physical health, and took less into consideration the psychological impact which may require specific tailor-made interventions.

While most clinical and research efforts have been directed at reducing the effects of the virus on physical health [10], its short- and long-term effects on mental health, especially among specific population groups such as those living with chronic conditions, have scarcely been investigated [11].

For cancer patients, the severity of the virus and the restrictive measures which were implemented have been a source of concern and anxiety, both due to the fear of an increased risk of complications if infected, and the fear of no longer receiving the necessary cancer treatment [12,13].

Individuals who had to undergo oncological screening but postponed it for fear of contagion, individuals with delayed treatments or diagnosis because of the pandemic as well as patients struggling with a complex pathological situation all experienced strong psychological distress.

In cancer patients, the increased risk of mortality and the difficulties in accessing health facilities to undergo medical examinations, tests and treatment for fear of becoming infected is intensifying the risk of developing mental disorders or aggravating existing problems [14]. In addition, mass quarantine and expanded restrictions on public transport represent a major barrier to accessing treatment and support facilities.

When analysing the impact of COVID-19 on cancer patients, it has to be taken into consideration that individuals may have different personalities and beliefs and not all of them were at the same stage of their cancer illness when the pandemic begun.

The patients who were diagnosed with cancer long before the start of the pandemic feel their fears reactivated, feel a sense of danger, a sense of threat of death and a state of alarm that they felt when they discovered their disease.

Patients undergoing chemotherapy or radiotherapy during the pandemic, on the other hand, have already entered a process that helps them regain a sense of control, the so-called adaptation phase. In this phase, they are able to handle a good amount of stress and to apply mechanisms of resilience, i.e., adaptation to the situation.

For those who were only recently diagnosed with cancer, a diagnosis during the pandemic or right before brings two types of traumas: one related to the discovery of the illness and another one related to the pandemic and its consequences.

Ultimately, patients who were newly diagnosed and admitted for surgery to remove the tumour during the pandemic had a very different experience from what they would have had before the outbreak. The hospital became a building with restricted access in order to protect patients, visitors and medical staff, which caused a great sense of loneliness [15].
The medical team can provide excellent assistance and care to patients, but this cannot replace family support.

The aim of this research was to assess the quality of life and the psychosocial impact of the lockdown due to the COVID-19 pandemic as well as the perception of changes in relationships between doctors and caregivers and their cancer patients in Italy, as well as identify the possible risks and protective factors for mental health outcomes.

The results of our study may be useful to provide the necessary elements to elaborate socio-assistance interventions aimed at maintaining or improving the quality of life and care of cancer patients on the basis of their physical as well as psychological needs.

2. Materials and Methods

The cross-sectional study was conducted on a specific target group: cancer patients. No aprioristic statistical calculation of the sample size was carried out. We collected data after the issue of the Italian Prime Ministerial Decree on 9 March 2020 which extended the measures to contain and fight the spread of the COVID-19 virus throughout the country.

The online survey was carried out in two moments (in April 2020 and then at the start of the second wave in early November 2020) using a Google Form platform and the invitations were launched on social media channels, namely Facebook and WhatsApp. This method makes it possible to promptly collect the perceptions of the chosen target audience, who reported the impressions and feelings while experiencing them.

2.1. Survey Instrument

We used an online self-administered questionnaire which was easy to understand and to fill in, built ad hoc by the Health Education Observatory of the Hygiene Laboratory of the Department of Human Sciences, Society and Health of the University of Cassino and Southern Lazio. The questionnaire consisted of 30 items with standardised answers with the aim of gathering socio-demographic personal information (sex, age, geographical origin, residence, characteristics related to the family environment, family network (living alone or in family) and lifestyle, working and living conditions, etc.) and clinical information (type of tumour, co-morbidity, type of therapy, etc.).

The perception of quality of life was measured through the health survey Short Form-12 (SF-12), validated on the Italian population by Kodraliu et al. (2001) [16]. This instrument helped us carry out an analysis of patients’ needs through the assessment of their general distress level and the presence of symptoms of depression, anxiety and stress related to the coronavirus epidemic.

2.2. Statistical Analysis

Descriptive statistics were performed to describe the socio-demographic and clinical characteristics of the sample. The respondents’ places of residence were recoded using a binary variable (yes/no) named ‘Urban area’. This variable was included in the regression model in order to assess the difficulties in reaching healthcare provider services. We hypothesised that individuals living in the suburbs or small areas would have more difficulty in reaching hospitals or health facilities, especially if they usually use public transportation compared to those living in urban areas.

In order to assess factors associated with the severity of depressive symptoms, anxiety and stress from the SF-12, multivariate linear regression models were run. Independent variables were having a pre-existing mental illness disorder and being female. The models were adjusted for different socio-demographic characteristics such as gender, occupational status, physical and/or psychological comorbidity, subjective perception of health status, family network, level of satisfaction with one’s own life and continuity of care.

Statistical analyses were performed using the EpiInfo 3.5 statistical package, and the level of statistical significance was set to $p < 0.05$. 
3. Results

The sample consisted of 376 participants, mainly female (82.9%), with an average age of 40.8 years ± 14.3 SD. Nearly half of the sample (48.1%) had a high school diploma and 31.6% had a university degree. Half of the respondents had a stable relationship and lived with their partner (48.1%) while a few lived alone (8.6%). The sample came from all over Italy but mainly from suburban areas (74.5%). Only 18.8% of the participants were employed and regularly went to work as before the pandemic. Among the sample, 17.7% was retired, 14.9% was on sick leave, 12.2% consisted of housewives and 6.6% was on layoff and 16.6% switched to Smart Working during the pandemic. No one reported to be in isolation because they were COVID-19 positive, although 2.6% of the sample stated that they were in precautionary isolation.

Some of the respondents had acquaintances/friends/family members who had been infected and were quarantined at home, who were hospitalised or who had died from COVID-19 (respectively, 20%, 10.6% and 12.2%). More than 80% spent more time on the Internet than usual, most frequently for instant messaging (82.3%). The Internet was the main source of information about coronavirus for most of them (73.9%), while doctors (specialists or general practitioners) were mentioned little (16%). A few patients suffered from a pre-existing physical illness (10%) and a very small percentage (3.7%) reported pre-existing psychological distress, most frequently anxiety (39.3%) and depressive disorders (34.6%). During the pandemic, almost half of the respondents perceived their health as good and fair (respectively, 46.5% and 39.4%) while a small percentage (9%) considered it very poor. The reported primary need was psychological support (52.5%) followed by medical support (37.3%).

Using safe transportation to reach hospital facilities for treatments was also one of the basic needs of the sample (27.8%). Although 72.7% of patients did not give up hospital therapies, 32.6% complained of variations in the continuity of treatments.

The majority of the sample (73.8%) was worried about becoming infected but 21.9% did not share their anxieties and worries with others.

The mean score for the physical component summary (PCS) was 64.4 ± 8.3 SD, while for the mental component summary (MCS), it was 63.3 ± 9.2 SD with lower scores in both the scales belonging to females (PCS males 45.58 ± 10.54 SD vs. females 40.41 ± 10.29 SD; \( p < 0.05 \); MCS males 47.82 ± 10.35 SD vs. females 44.60 ± 10.11 SD; \( p < 0.05 \)).

Linear regression models showed a significant correlation between the presence of pre-existing psychological distress and an increase in the severity of anxiety–depressive symptoms (PCS) due to the pandemic \( r = 0.3; (p < 0.05) \).

The multivariate regression analysis showed that a pessimistic perception of the quality of life was influenced by living in extra-urban areas (OR = 1.23; IC 95%: 1.01–2.2; \( p < 0.05 \)) and alone (OR 1.51; IC 95%: 1.1–2.3; \( p < 0.05 \)), while the perception of a reduced physical function was shown to be affected by states of anxiety and stress (OR = 1.8; IC 95%: 1.43–3.01; \( p < 0.05 \)) and difficulties in the continuity of medical assistance (OR = 1.3; IC 95%: 1.09–2.7; \( p < 0.05 \)).

Furthermore, multivariate regression models adjusted for the period of exposure to the pandemic and related restrictive measures were significantly associated with worse depressive symptoms (OR = 1.9; 95% CI: 1.3–3.2; \( p < 0.05 \)) and stress (OR = 2.1; 95% CI: 1.7–3.5; \( p < 0.05 \)). The risk of severe depressive symptoms, anxiety and stress was higher in females (OR = 2.5; 95% CI: 1.6–3.9; \( p < 0.05 \)) and in people with pre-existing psychological distress (OR = 3.1; 95% CI: 2.4–4.6; \( p < 0.05 \)). In addition, we found that subjects who showed higher levels of satisfaction with their lives and with a stable family network reported the lowest psychosocial impact of the pandemic (respectively, OR = 0.4, 95% CI: 0.1–0.7; \( p < 0.05 \) and OR = 0.2, 95% CI: 0.06–0.9; \( p < 0.05 \)).

4. Discussion

Our data confirm that the current pandemic is an unprecedented event in terms of its impact on the mental health of the general population, especially those affected by chronic
conditions. A second interesting finding of our survey is that levels of anxiety, depression and stress increased over time, appearing more severe in the last weeks of the pandemic, as confirmed in our regression model adjusted for the socio-demographic characteristics of the respondents. This confirms that the duration of the restrictions significantly affected not only physical health but also psychological and social health.

In our study, females were found to be at higher risk of developing anxiety–depressive symptoms, as already shown in a previous study in Italy [17] and in previous outbreaks. This result may also be due to the higher incidence of anxiety–depressive disorders in women [18] and depressive status and mood swings in women [19] in community samples [20].

Moreover, having a pre-existing mental health problem is a significant risk factor for the development of depressive symptoms, anxiety and stress [5].

This finding suggests the need to provide appropriate and tailored support interventions as early as possible for cancer patients with symptoms of psychological and emotional disorders, a vulnerable segment of the population that was neglected during the initial stages of the pandemic [21,22].

During the lockdown, participants reported an increase in time spent on the Internet, which was associated with an increased risk of developing mental health problems, thus not confirming our hypothesis of a protective effect played by the Internet on mental health. This result could be due to the diffusion of uncontrolled and unreliable information and fake news through the Internet, which could have increased levels of anxiety and depressive symptoms in lonely people with lower levels of education [23]. In a situation of health and social risk, communication must be accurate and there is a need for media professionals to receive adequate training in order to provide impartial and realistic information during catastrophic events.

In our study, being unemployed, retired or housebound was significantly associated with higher levels of anxiety–depressive symptoms. Our results are in line with a study carried out in the United Kingdom which showed that belonging to a socio-economically disadvantaged group increased gradually the risk of developing problems of psychosocial distress during the first three weeks of the lockdown [24]. It is therefore important to undertake comprehensive, multi-level socio-economic initiatives aimed at reducing the negative effects of the pandemic on society.

Finally, good levels of family support were reported by the sample who participated in our survey, which may be due to the importance of strong family ties and social relationships the Italian socio-cultural context, potentially having a positive impact on the perception of mutual social support [25]. We found that living alone contributes to a worse perception of one’s quality of life in cancer patients during the lockdown, confirming the findings of previous studies [26].

To the best of our knowledge, our study was one of the first to be conducted across the Italian peninsula with a fair sample of the Italian cancer population. Validated and reliable assessment tools were used to investigate different domains of health and the perception of one’s quality of life level. Therefore, we believe that the higher frequency of anxiety–depressive symptoms in our sample could be interpreted as related to COVID-19, although this causal association should be investigated further. We are aware that using an online tool is not the best methodological choice as it may have excluded older patients or those living in socially disadvantaged settings. However, this choice was necessary in order to reach a specific demographic of the Italian population in a short time and in a pandemic context. It must be also acknowledged that the data collected are related to anxiety–depressive symptoms, which cannot be considered sufficient to formulate a diagnosis of anxiety–depressive disorders. Moreover, in order to have a better understanding of the variables influencing quality of life, it would have also been useful to further investigate the specific composition of family networks as well as clinical and medical information such as the presence of metastases to the locomotor system, the type of medication used or the presence of any thromboembolic complications.
5. Conclusions

Although physical isolation and lockdown are essential public health measures to contain the spread of the COVID-19 pandemic, they represent a serious threat to the psychological and social health and well-being of the general population, especially those affected by health problems.

The emotional, social and relational difficulties that have emerged require strong resilience. It is important for health professionals, caregiver and social workers to identify new needs in order to enhance home care interventions, personalise and optimise care, ensure continuity of care and guarantee a high quality of life even in a health emergency situation.

In addressing the measures that can be put into place to deal with the psychosocial impact of the pandemic, a first distinction must be made between interventions during the crisis and interventions after the crisis. The second distinction that needs to be made is between those who have been quarantined because they were infected or have been in contact with infected people and those who have only undergone lockdown.

The present study has several clinical implications: (a) to promote mass screening campaigns for the general population to identify the presence of sub-threshold mental disorders; (b) to disseminate information on how to deal with the mental health consequences of the pandemic; and (c) to support the population at risk—mainly people with pre-existing mental health problems and COVID-19 patients—with tailored innovative psychosocial interventions.

A multi-disciplinary approach involving oncologists, family doctors, clinical pharmacologist, social workers, psychologists and in some cases psychiatrists, must be pursued.

During the pandemic, the main mental treatment would be directed to counteract fear. Meditation techniques, mindfulness and psychological support as well as online counselling can be very helpful during this time.

After the critical phase, attention will have to be focused on ensuring well-being at work and monitoring over time [27].

Therefore, investment in mental health services and programmes at the national level, which have suffered from limited funding for years, is now more important than ever.

Author Contributions: M.F., E.L. and E.D.V. contributed to the design and coordination of this study. All contributed to the analysis of the questionnaires. A.D.M. was responsible for data collection. M.F. carried out the statistical analysis. L.F. and A.D.M. contributed to the design of the questionnaires and drafting of the manuscript. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Institutional Review Board of the Department of Human Sciences, Society and Health, University of Cassino and Southern Lazio.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author.

Conflicts of Interest: The authors declare no conflict of interest.

References